UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER
SCHINDLER, DAVID M

ART UNIT	PAPER NUMBER
2862	

DATE MAILED: 04/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

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	Application No.	Applicant(s)
Office Action Summary	10/632,217	GOVARI, ASSAF
	Examiner	Art Unit	
	David Schindler	2862	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>29 March 2006</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>29 March 2006</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☐ All b)☐ Some * c)☐ None of:

   1.☐ Certified copies of the priority documents have been received.

   2.☐ Certified copies of the priority documents have been received in Application No. _____.

   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
   Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____ .
5)☐ Notice of Informal Patent Application (PTO-152)
6)☐ Other: _____.

DETAILED ACTION

1.   This action is in response to the Request for Continued Examination filed

3/29/2006.

Response to Arguments

2.   Applicant's arguments filed 3/29/2006 have been fully considered but they are

not persuasive.

With regard to Applicant's arguments in the last paragraph of page 1 of the

Remarks, lines 1-7 of page 2 of the Remarks, and the first full paragraph of page 2 of

the Remarks, the Examiner respectfully disagrees. The Examiner notes Figure 17 of

Schneider which discloses that the P&O process is repeated. Note lines 53-67 of

column 18 of Schneider which states that once the process has converged correctly,

that P&O solution becomes the starting point for the next P&O measurement cycle.

Note also lines 1-7 of column 19. Therefore this, in combination with lines 36-67 of

column 17 and lines 1-22 of column 18, as well as in combination with the below claim

rejections, appears to include the phrase "if testing reveals a convergence of the

computations, then repeating steps (i) through (iv) for N repetitions, wherein N equals a

plurality of times" as recited in the last four lines of claim 1. Likewise, the last four lines

of claim 12 are also appear to be included in the above disclosure in combination with

the below claim rejections.

Claim Rejections - 35 USC § 102

3.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4.   Claims 1- 22 are rejected under 35 U.S.C. 102(b) as being anticipated by

Schneider (6,073,043).

As to Claim 1,

Schneider discloses (i) producing energy fields at a plurality of different

frequencies in a vicinity of the object (60) ((Column 5, Lines 44-46 / note: frequency)

and (Column 23, Lines 16-21) and (Figure 11)), (ii) receiving signals that are generated

at a location of the object at the different frequencies in response to the energy fields

((Column 22, Lines 62-66) and (Column 23, Lines 42-43)), (iii) making multiple

computations of spatial coordinates of the object based on the signals received at the

different frequencies ((Column 9, Lines 8-67) and (Column 10, Lines 1-67) and (Column

11, Lines 1-49 / note lines 16-17)), (iv) ascertaining whether the energy fields have been

perturbed by an article in the vicinity of the object by testing a convergence of the

computations ((Column 17, Lines 35-38) and (Column 17, Lines 46-53) and (Column

18, Lines 1-22)), and (v) if testing reveals a convergence of the computations, then

repeat steps (i) through (iv) for N repetitions, where N equals a plurality of times.

As to Claim 2,

Schneider discloses producing the energy fields includes producing magnetic

fields (Column 22, Lines 62-66), and wherein receiving the signals includes receiving

electrical signals which are generated responsively to the magnetic fields (Column 23,

Lines 42-51).

As to Claim 3,

Schneider discloses producing the magnetic fields includes driving multiple

radiator coils ((11) through (18)) with electrical currents at the different frequencies so

as to generate the magnetic fields ((Column 5, Lines 44-46 / note: frequency) and

(Column 22, Lines 62-66) and (Column 23, Lines 15-21) and (Figure 11)).

As to Claim 4,

Schneider discloses driving the multiple radiator coils includes driving each of the

coils to generate the magnetic fields at a unique, respective set of the frequencies

((Column 22, Lines 62-66) and (Column 23, Lines 15-21)).

As to Claim 5,

Schneider discloses receiving the electrical signals includes receiving the

electrical signals from one or more sensor coils that are fixed to the object ((Figure 11)

and (Column 23, Lines 42-51) and (Column 24, Lines 22-24) and (Column 23, Lines 65-

67) and (Column 24, Lines 1-6)).

As to Claim 6,

Schneider discloses producing the energy fields includes scanning sequentially

through a predetermined sequence of the frequencies ((Column 5, Lines 44-46 / note:

frequency) and (Column 23, Lines 15-21) and (Column 23, Lines 32-35) and (Figure 11)).

As to Claim 7,

Schneider discloses producing the energy fields includes generating the fields simultaneously at the different frequencies ((Column 5, Lines 44-46 / note: frequency) and (Column 23, Lines 15-21) and (Column 23, Lines 35-41 / note: frequency division multiplexing) and (Figure 11)).

As to Claim 8,

Schneider discloses making the multiple computations includes solving a set of simultaneous equations relating the received signals to the spatial coordinates of the object ((Column 10, Lines 42-44) and (Column 11, Lines 16-17) and (Column 24, Lines 18-19) and (Figure 11)).

As to Claim 9,

Schneider discloses making the multiple computations includes applying an iterative method of approximation to determine the spatial coordinates ((Column 10, Lines 1-8) and (Column 11, Lines 16-17)), and wherein testing the convergence includes evaluating a convergence criterion of the iterative method ((Column 10, Lines 1-8) and (Column 11, Lines 16-17) and (Column 17, Lines 36-38) and (Column 17, Lines 46-67) and (Column 18, Lines 1-22)).

As to Claim 10,

Schneider discloses testing the convergence includes detecting a discrepancy between the spatial coordinates computed at the different frequencies ((Column 5,

Lines 44-46 / note: frequency) and (Column 5, Lines 50-51) and (Column 17, Lines 36-38) and (Column 17, Lines 46-67) and (Column 18, Lines 1-22)).

As to Claim 11,

Schneider discloses upon ascertaining that the energy fields have been perturbed, correcting the computations to compensate for a presence of the article in the vicinity of the object (Column 18, Lines 7-9).

As to Claim 12,

Schneider discloses at least one radiator (10) which is adapted to produce energy fields at a plurality of different frequencies in a vicinity of the object (60) ((Column 5, Lines 44-46 / note: frequency) and (Column 22, Lines 62-66) and (Column 23, Lines 16-21) and (Figure 11)), at least one sensor (20), fixed to the object (Column 24, Lines 22-24), which is adapted to generate signals in response to the energy fields at the different frequencies ((Column 22, Lines 62-66) and (Column 23, Lines 42-51)), and a system controller (50), which is adapted to (i) make multiple computations of spatial coordinates of the object based on the signals generated at the different frequencies ((Column 9, Lines 8-67) and (Column 10, Lines 1-67) and (Column 11, Lines 1-49 / note lines 16-17)), and to (ii) ascertain whether the energy fields have been perturbed by an article in the vicinity of the object by testing a convergence of the computations ((Column 17, Lines 36-39) and (Column 17, Lines 46-53) and (Column 18, Lines 7-22) and (Column 26, Lines 44-63)), wherein the system controller repeats (i) and (ii) when testing reveals a convergence of the computations for N repetitions, wherein N equals a plurality of times.

As to Claim 13,

Schneider discloses the energy fields include magnetic fields (Column 22, Lines 62-66), and wherein the signals include electrical signals which are generated by the at least one sensor responsively to the magnetic fields (Column 23, Lines 42-51).

As to Claim 14,

Schneider discloses the at least one radiator includes multiple radiator coils ((11) through (18)) and driving circuitry ((71) through (78) and (42) and (41)) ((Figure 11)), which is adapted to drive the radiator coils with electrical currents at the different frequencies so as to generate the magnetic fields ((Column 5, Lines 44-46 / note: frequency) and (Column 22, Lines 62-66) and (Column 23, Lines 15-21) and (Figure 11)).

As to Claim 15,

Schneider discloses the driving circuitry is adapted to drive each of the coils to generate the magnetic fields at a unique, respective sequence of the frequencies ((Column 22, Lines 62-66) and (Column 23, Lines 15-24)).

As to Claim 16,

Schneider discloses the at least one sensor includes one or more sensor coils ((Figure 11) and (Column 23, Lines 42-51) and (Column 24, Lines 22-24) and (Column 23, Lines 65-67) and (Column 24, Lines 1-6)).

As to Claim 17,

Schneider discloses the at least one radiator is adapted to generate the energy fields sequentially with a predetermined sequence of the frequencies ((Column 5, Lines

44-46 / note: frequency) and (Column 23, Lines 15-21) and (Column 23, Lines 32-35)

(Figure 11)).

As to Claim 18,

Schneider discloses the at least one radiator is adapted to generate the fields

simultaneously at the different frequencies ((Column 5, Lines 44-46 / note: frequency)

and (Column 23, Lines 15-21) and (Column 23, Lines 35-41 / note: frequency division

multiplexing) and (Figure 11)).

As to Claim 19,

Schneider discloses the system controller is adapted to compute the spatial

coordinates by solving a set of simultaneous equations relating the received signals to

the spatial coordinates of the object ((Column 10, Lines 42-44) and (Column 11, Lines

16-17) and (Column 24, Lines 18-19) and (Column 24, Lines 22-24) and (Figure 11)).

As to Claim 20,

Schneider discloses the system controller is adapted to compute the spatial

coordinates by applying an iterative method of approximation ((Column 10, Lines 1-8)

and (Column 11, Lines 16-17) and (Column 24, Lines 18-19)), and to test the

convergence of the computation by evaluating a convergence criterion of the iterative

method ((Column 10, Lines 1-8) and (Column 11, Lines 16-17) and (Column 17, Lines

36-38) and (Column 17, Lines 46-67) and (Column 18, Lines 1-22)).

As to Claim 21,

Schneider discloses the system controller is adapted to test the convergence by

detecting a discrepancy between the spatial coordinates computed at the different

frequencies ((Column 5, Lines 44-46 / note: frequency) and (Column 5, Lines 50-51)

and (Column 17, Lines 36-38) and (Column 17, Lines 46-67) and (Column 18, Lines 1-

22) and (Column 26, Lines 44-62)).

As to Claim 22,

Schneider discloses the system controller is adapted, upon ascertaining that the

energy fields have been perturbed, to correct the computations to compensate for a

presence of the article in the vicinity of the object ((Column 18, Lines 7-9) and (Column

24, Lines 18-19) and (Column 27, Lines 7-9)).

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to David Schindler whose telephone number is (571) 272-

2112. The examiner can normally be reached on M-F (8:00 - 5:00).
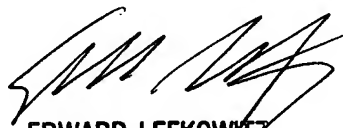
If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Edward Lefkowitz can be reached on (571) 272-2180. The fax phone

number for the organization where this application or proceeding is assigned is 571-

273-8300.

Information regarding the status of an application may be obtained from the

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you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

David Schindler
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